

REMARKS/ARGUMENTS

Favorable reconsideration and allowance of the present application is respectfully requested. Claims 1, 7-10 and 13-17 are pending in the above application, of which claims 1 and 15 are independent. By the above amendment, claims 5, 11 and 12 have been cancelled without prejudice.

The Office Action dated September 6, 2011, has been received and carefully reviewed. In that Office Action, claim 17 was rejected under 35 U.S.C. 112, second paragraph, claims 5, 11 and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by Nakada, claims 1, 7-10, 13, 14 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski, and claims 15 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski and further in view of Niemeier. It is believed that all claims are allowable over the art of record, and reconsideration and allowance of claims 1, 7-10 and 13-17 are respectfully requested in view of the following remarks.

REJECTIONS UNDER 35 U.S.C. 112, SECOND PARAGRAPH

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for reciting that a second composition comprises cerium while claim 15 from which it depends recites that the second composition comprises boron. It is respectfully submitted that claim 17 requires a composition that includes both cerium and boron, consistent with the recitation of boron and/or cerium in, for example, claim 1. Claim 17 is therefore submitted to be definite and supported by the original specification.

While acknowledging that claim 17 depends from claim 14, the examiner refers to

Reply to Office Action dated September 6, 2011

the language "boron and/or cerium" in claim 1 to show that claim 17 is indefinite. It is believed that the language "boron and/or cerium" in claim 1 is consistent with the language of claim 17; that is, the second composition may contain only boron or only cerium or both boron and cerium. The basis for this rejection is therefore not clear. If the examiner maintains that claim 17 is indefinite, clarification is respectfully requested regarding why the recitation of two different elements in a composition that can contain boron and/or cerium is believed to render the claim indefinite.

REJECTIONS UNDER 35 U.S.C. 102(b)

Claims 5, 11 and 12 were rejected under 35 U.S.C. 102(b) as being anticipated by Nakada. These claims have been cancelled without prejudice by the above amendment, thereby obviating this rejection.

REJECTIONS UNDER 35 U.S.C. 103(a)

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski. Claim 1 recites, *inter alia*, a heat exchanger having a number of heat transfer surfaces made from aluminum or aluminum compounds to which a plurality of layers have been applied. The first layer comprises nanoparticles of a first composition, providing corrosion resistance, and the second layer comprises nanoparticles of a second composition different than said first composition and having hydrophilic properties. The nanoparticles of the first layer or the second layer comprise organic and/or inorganic compounds of boron and/or cerium dissolved and/or dispersed in inorganic and/or organic solvents, and each layer thickness amounts to less than 1

μm or equal to 1 μm, and the total layer thickness amounts to less than 5 μm or equal to 5 μm.

Inbe does not show a corrosion resistant layer having nanoparticles as claimed or a corrosion resistant layer having the claimed thickness or a hydrophilic layer having the claimed thickness. However, Trocznyski disclose a 50 μm thick anticorrosion layer comprising nanoparticles. It might be possible to use Trocznyski's disclosed anticorrosion layer as the anticorrosion layer of Inbe. However, in order to meet the limitations of claim 1, Trocznyski's anticorrosion layer would have to be reduced in thickness by a factor of 50. Applicant maintains that the record does not include a proper reason for thinning Trocznyski's anticorrosion layer in this manner and therefore again submits that the requirements of *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) have not been satisfied and that claim 1 is allowable over the art of record.

Applicant previously argued that "obvious design expedient" was not a legally sufficient reason for changing the thickness of Trocznyski's anticorrosion layer. The examiner did not respond to this argument except to state that the rejection also included the statement: "One of ordinary skill in the art would employ any layer thickness to achieve a desired strength, longevity, effectiveness or heat transfer." It is respectfully submitted that this statement, taken alone or in combination with the "obvious design expedient" statement, does not constitute a reason for using an anticorrosive layer that is 98% thinner than the one disclosed in the art.

It is respectfully submitted that the record does not indicate what strength, longevity, effectiveness or heat transfer would be desired by a person of ordinary skill in the art or how reducing the thickness of a given layer by a factor of 50 would achieve

Reply to Office Action dated September 6, 2011

such a result. It seems reasonable that high strength, long life and good effectiveness would be desirable, but nothing in the record suggests that any of these qualities will be achieved by reducing the thickness of an anticorrosion layer by 98%. And, assuming for sake of argument only that removing substantially all of the anticorrosive layer would improve heat transfer, nothing in the record suggests that Troczynski's anticorrosive layer would still satisfactorily perform its anticorrosive function if reduced in thickness in this manner. Nothing in the record suggests that a person looking at Inbe and considering what anticorrosive material to use would select the material of Troczynski and then apply no more than 1 μm of it instead of the 50 μm as disclosed and expect to achieve a useful result. For these reasons, it is respectfully submitted that the statement "One of ordinary skill in the art would employ any layer thickness to achieve a desired strength, longevity, effectiveness or heat transfer" does not constitute a reason for a person of ordinary skill in the art to thin Troczynski's anticorrosive layer by a factor of 50 before adding it to Inbe. Claim 1 is submitted to be allowable for at least this reason.

If the rejection of claim 1 is maintained, it is respectfully requested that the examiner explain for the record 1) the legal basis for the "obvious design expedient" portion of the rejection and 2) what desired strength, longevity, effectiveness or heat transfer would be achieved by removing 98% of a given anticorrosive layer.

Claims 7-10 and 13 depend from claim 1 and are submitted to be allowable for at least the same reasons as claim 1.

It is respectfully submitted that the foregoing arguments also show that a *prima facie* case of obviousness has not been presented in connection with independent

claim 14. Claims 15-17 depend from claim 14 and are submitted to be allowable for at least the same reasons as claim 14.

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inbe in view of Troczynski and further in view of Niemeier. Claims 15 and 17 depend from claim 14. Niemeier does not address the shortcomings of Inbe and Troczynski discussed above. Claims 15 and 17 are therefore submitted to be allowable for at least the same reasons as claim 14.

CONCLUSION

Each issue raised in the Office Action dated September 6, 2011, has been addressed, and it is believed that claims 1, 7-10 and 13-17 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited. If the examiner believes that any additional changes would place the application in better condition for allowance, the examiner is invited to contact the undersigned attorney at the telephone number listed below.

Reply to Office Action dated September 6, 2011

Deposit Account Authorization

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 50-3828 and please credit any excess fees to such deposit account.

Respectfully submitted,



Martin R. Geissler
Registration No. 51011

PO BOX 1364
Fairfax, VA 22038-1364
1.703.621.7140

Date: December 6, 2011